

# **California's Diesel Risk Reduction Program**

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**December 2000  
Portland, Oregon**

California Environmental Protection Agency



**Air Resources Board**

12/15/00

## **Overview**

- **Need for Diesel Emission Reductions**
- **Diesel Risk Reduction Plan**
- **Diesel Engine Retrofit Program**



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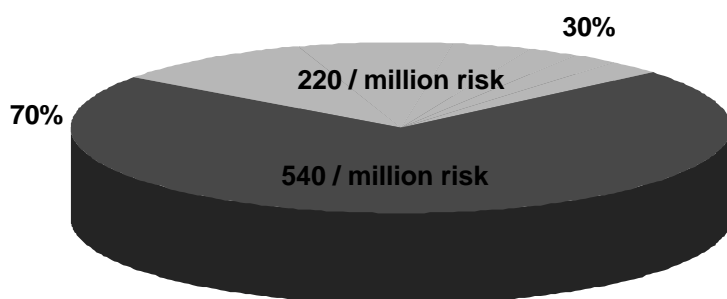
## Diesel PM as a Toxic Air Contaminant

- In August 1998, ARB listed particulate emissions from diesel-fueled engines as a toxic air contaminant.
- Risk Reduction Plan: multi-pronged approach to reducing emissions from diesel-fueled engines in CA



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## Diesel PM Responsible for 70% of Year 2000 Statewide Risk from Air Toxics Emissions



Diesel Exhaust PM10 (70%)



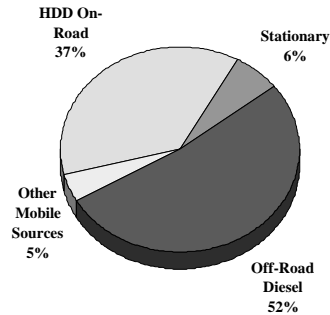
1,3 Butadiene (10%)  
Benzene(8%)  
Carbon Tetrachloride (4%)  
Formaldehyde (3%)  
Hexavalent Chromium (2%)  
All Others (3%)



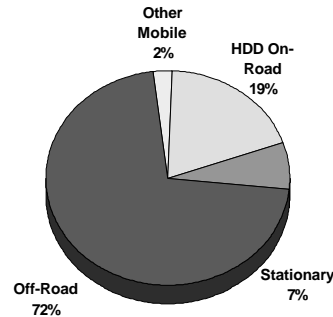
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## Reducing Diesel Emissions is a Priority

**“Diesel” NO<sub>x</sub>**  
(Statewide-2010)



**Diesel PM**  
(Statewide-2010)



Source for ROG and NO<sub>x</sub>: 1994 SIP  
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## ARB: Major Regulations and Programs

- Lower New Engine Standards
- Heavy-duty Smoke Inspection/Periodic Smoke Inspection Program
- Transit Bus Rule
- Carl Moyer Program



## **Public Transit Bus Fleet Rule and Emission Std's for New Urban Buses**

- **Reduces ozone precursor emissions  
(focus on NO<sub>x</sub>)**
- **Reduces public exposure to toxic PM**
- **Two paths for Transit Agencies:**
  - **Alternative-Fuel**
  - **Low-Emission Diesel**
- **Fosters advanced bus technology**



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## **Carl Moyer Program**

- **Legislature appropriation: \$98 MM over  
first three years**
- **Incentive-based program for heavy-duty  
engines**
- **Grants for incremental cost of cleaner  
engines**
- **First year reductions were 4 tpd NO<sub>x</sub>, 100  
lbs/day PM**



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## **Findings of Diesel Risk Reduction Plan**

- **Diesel-Fueled Engines are the Most Significant Source of Air Toxics in California.**
- **Existing Regulations have Significantly Reduced PM Emissions from Diesel-Fueled Engines, but More Reductions are Feasible and are Needed.**
- **All Categories and Uses of Diesel-Fueled Engines Need to be Examined**



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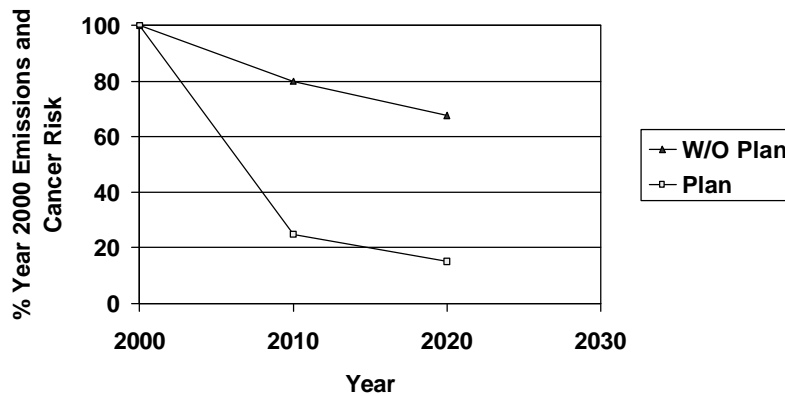
## **Diesel PM Reduction Plan**

- **Reduce Emissions from New Engines**
- **Require Retrofit of Existing Engines**
- **Ensure In-use Emission Performance**
- **Provide Low Sulfur Fuel (<15ppm) to Enable Aftertreatment Technology**



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### **The Plan Reduces Diesel Emissions and Risk by 75% in 2010 and by 85% in 2020**



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## **Diesel Retrofits**

- **Substantial reductions possible by retrofitting in-use diesel engines**
- **Engine and aftertreatment technology available to reduce PM and NO<sub>x</sub>**
- **Detail cost analyses will be conducted for regulations**



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## **Retrofit Programs Reduce Emissions Now**

- **Implementation Begins Soon**
  - \* Transit Bus retrofits begin January 2003
  - \* School bus retrofits begin 2001
- **Demonstration Programs**
- **Diesel Particulate Filter Verification:**
  - 85% reduction in PM required



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## **Diesel Risk Reduction Implementation**

- **Diesel Retrofit International Advisory Committee plus additional public meetings**
- **Combination of Regulations and Voluntary/Incentive Programs**
- **Coordination with Local Agencies & U.S. EPA necessary**



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## Benefits



**Plan will significantly reduce diesel PM emissions and potential cancer risks**

**Decrease in noncancer health effects**

**Other benefits include  
improved visibility  
reduced “soiling”**



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## For more information

- **Diesel Risk Reduction Website**
- **[www.arb.ca.gov/toxics/diesel/diesel.htm](http://www.arb.ca.gov/toxics/diesel/diesel.htm)**
  - Sign up to receive notices
  - Portal to diesel information at ARB
- **Nancy Steele, Retrofit Implementation**
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